High-resolution imaging and fiber coupling with 3D printed mesoscale structures


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1. Fabrication

2. Imaging objectives

3. Fiber coupling

Focal point

Effective focal length: 1.06 mm

Distance to target: d = 1 mm

Doublet design with 4 aspheric free-form surfaces

Lens design

Optical design

Multicore fiber

Camera sensor

Outlook

- Larger objective diameter
- New optical designs for specific applications
- Combination of different optical elements (e.g., prism + objective)
- Anti-reflective coating
- Achromatic lens using 2 different photoresists
- Realization of fiber coupling from single photon source

References


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